CLAIMS

1. A solid state laser, comprising:

a laser resonator including an output mirror, a laser crystal containing rare earth ions and at least one reflecting mirror, said output mirror, laser crystal and reflecting mirror being arranged along an optical axis,

a laser diode for emitting pumping light;

a pumping optical system for focusing pumping light emitted from said laser diode onto said laser resonator coaxially with said optical axis;

wherein said laser crystal comprises a plurality of individual laser crystals arranged along said optical axis, said individual laser crystals being each made of a material having a composition expressed by a same chemical formula and having progressive higher concentrations of said rare earth ions toward said output mirror.

2. A solid state laser according to claim 1, wherein said individual laser crystals are disposed in close mutual contact.

3. A solid state laser according to claim 1, wherein said individual laser crystals are integrally bonded to each other.

4. A solid state laser according to claim 1, wherein said individual laser crystals are spaced from each other by a gap substantially smaller than a length of a shortest one of said individual laser crystals.

5. A solid state laser according to claim 1, wherein said laser crystal is provided with a heat sink on side faces thereof for removal of heat.

6. A solid state laser according to claim 1, wherein said individual laser crystals are made of a material selected from a group consisting of YVO_4 , $Y_3Al_5O_{12}$ (YAG), $LiYF_4$ (YLF) and $GdVO_4$.

7. A solid state laser according to claim 1, wherein said rare earth ions consist of neodymium ions.